For: METHOD FOR PRODUCING L-THREONINE USING BACTERIA BELONGING TO THE GENUS ESCHERICHIA

Confirmation No.: 7880

REPLY BRIEF FOR APPELLANT

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

COMES NOW the Appellant to present this Reply Brief in support of the appeal of the final rejection of Claims 12, 15-16, 19, and 21-24 contained in the Office Action dated January 18, 2007 ("Final Rejection"), and to respond to the Examiner's Answer dated November 16, 2007 in the above-captioned patent application. A petition for an extension of time is not necessary, as this Reply Brief is being filed within two months of the mailing of the Examiner's Answer.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. If, however, additional extensions of time are necessary to prevent abandonment of this application or dismissal of this

of selected comments in the Examiner's Answer. Although not all the comments made in the Examiner's Answer are addressed in this Reply Brief, the arguments and assertions set forth in the Appeal Brief filed September 5, 2007 still stand and may be referred to as necessary.

Appellants would like to explain why the Examiner's assertion that the threonine synthetic pathways of *C. glutamicum* described in the prior art would be predicative of the same pathways in *E. coli* is incorrect. Specifically, although the threonine synthetic pathways of *E. coli* of the present invention and those of *C. glutamicum* described in Katsumata *et al.* are similar, there are many differences in these pathways between the two microorganisms. Specifically, the enzymes which act in each step of the respective pathways are different between *E. coli* and *C. glutamicum*. Furthermore, the feedback mechanisms by various amino acids are also different between these two microorganisms.

For example, in the regulatory pathways and biosynthesis of lysine and threonine, whereas only one type of aspartokinase is required in *C. glutamicum*, three different isozymes of aspartokinase are required for the same function in *E. coli*. As a result, the system of biosynthesis and regulation in *E.coli* is far more complex, as further demonstrated by the fact that the one aspartokinase of *C. glutamicum* is inhibited by the concerted feedback of both lysine and threonine, whereas the three types of isozymes present in this same pathway in *E. coli* are each inhibited separately by lysine, threonine,

fraught with difficulty and unpredictability. As such, it would not be obvious to one of ordinary skill in the art from Katsumata et al., either singly or in combination with the other cited references that the method of producing threonine using *E. coli* of the present invention would lead to threonine production.

For at least the reasons presented herein, each of the subject matters of Claims 12, 15-16, 19, and 21-24, taken as a whole, are patentable. Accordingly, the rejection of each of Claims 12, 15-16, 19, and 21-24 is reversible error.

Respectfully submitted,

By: _____

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